THE MOD EARLY HUMAN FACTORS ANALYSIS PROCESS

TTCP HUM TP9 Workshop, 5-6 June 2000
DCIEM, Toronto, Canada

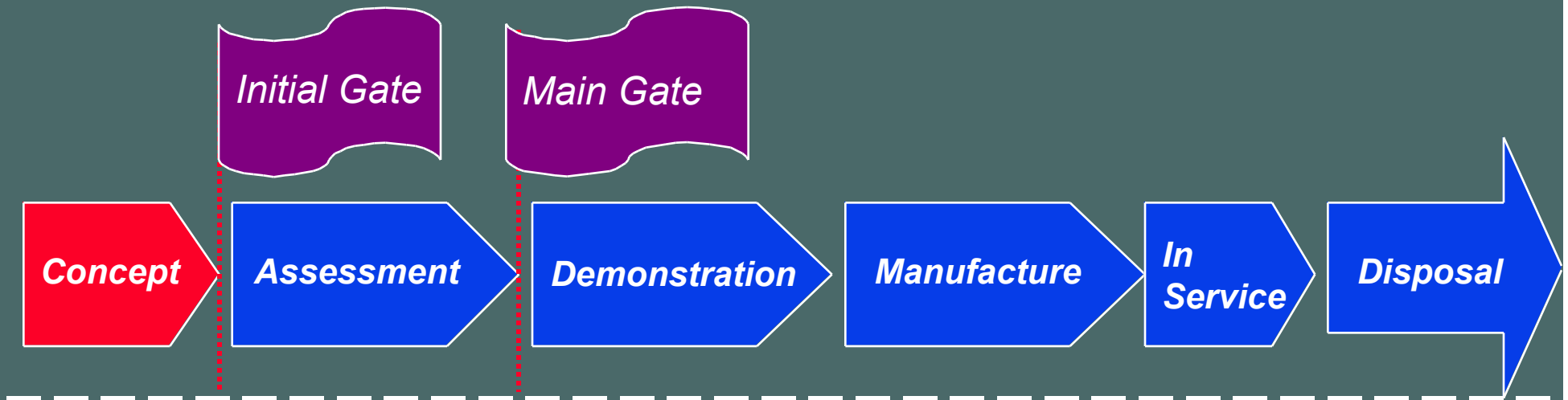**UK Member HUM TP9**

Defence Evaluation & Research Agency
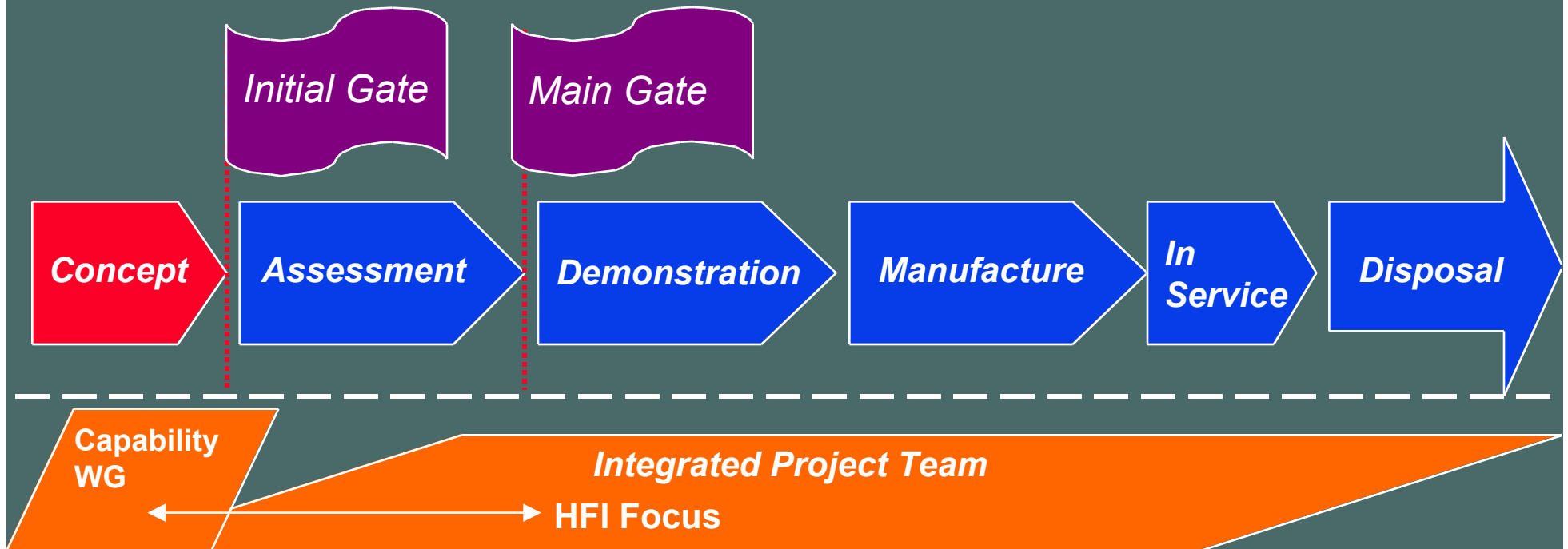**Centre for Human Sciences**

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Background

- Research focused on developing the HFI process in acquisition

- Guidance products developed within CRP TG5

  - A Guide for OR Desk Officers

  - Chief of Defence Procurement Instruction (CDPI/TECH/330)

  - Defence Procurement Management Guide (DPMG/TECH/330)

  - Early Human Factors Analysis (EHFA) User Guide

- Lessons learned and changes in acquisition have highlighted the need to revise the HFI process and guidance

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THE "SMART" PROCUREMENT PROCESS

Initial Gate

Main Gate

Concept

Assessment

Demonstration

Manufacture

In Service

Disposal

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Capability WG

Integrated Project Team

HFI Focus

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THE "SMART" PROCUREMENT PROCESS

Initial Gate

Main Gate

Concept → **Assessment** → **Demonstration** → **Manufacture** → **In Service** → **Disposal** →

Capability WG

Integrated Project Team

← **HFI Focus** →

HFI Domain Specialists

HFI Panel

HFI Stakeholders

- MOD/DERA
- Industry

- Users
- Manning

- Doctrine
- ILS

- Training

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HFI in Concept

■ Critical Early Phase

   – Determines whether project will proceed

   – Identifies key risks and issues

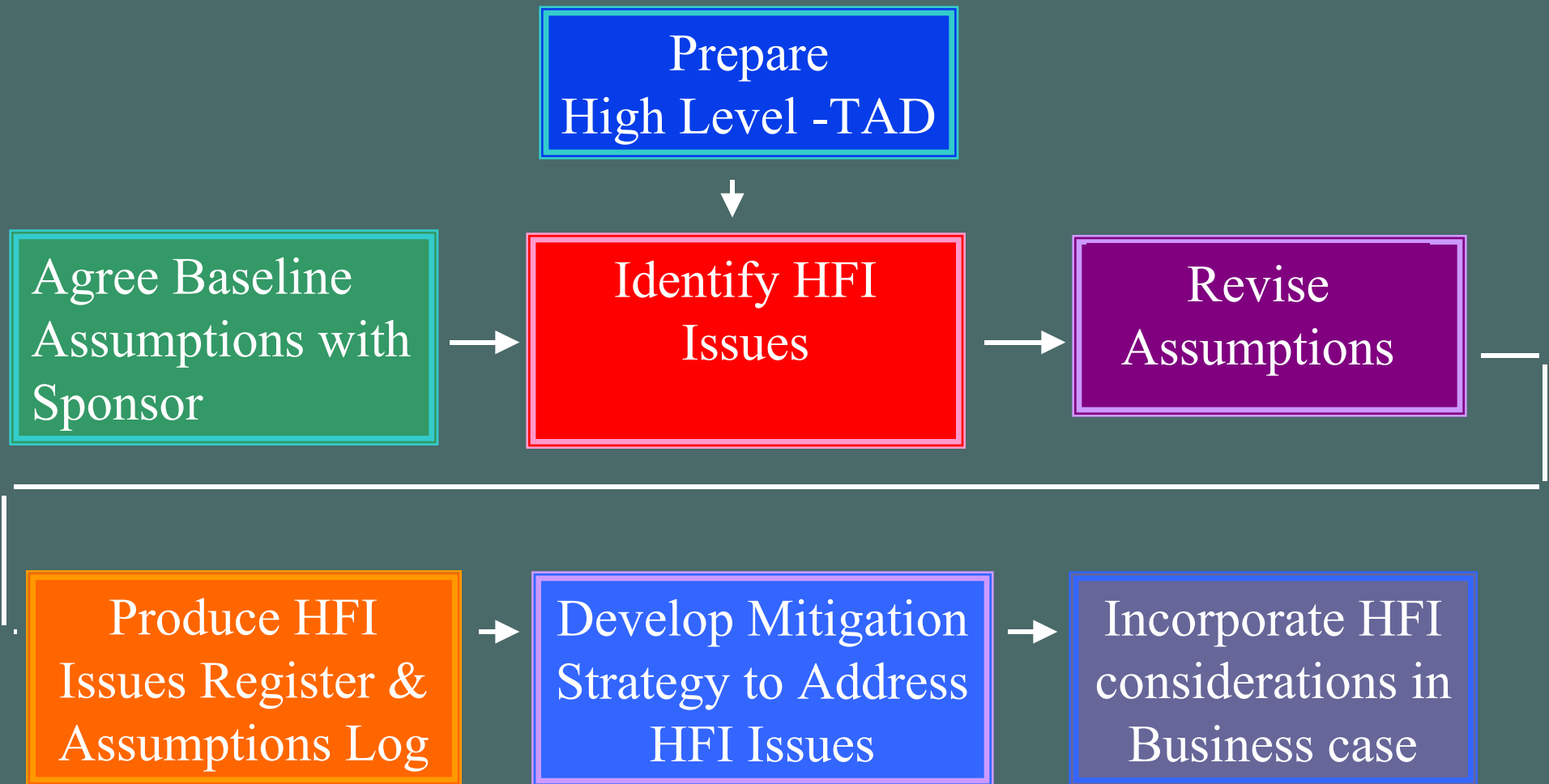   – Determines resources for subsequent phases

■ HF traditionally weak at early stages

   – No design to assess
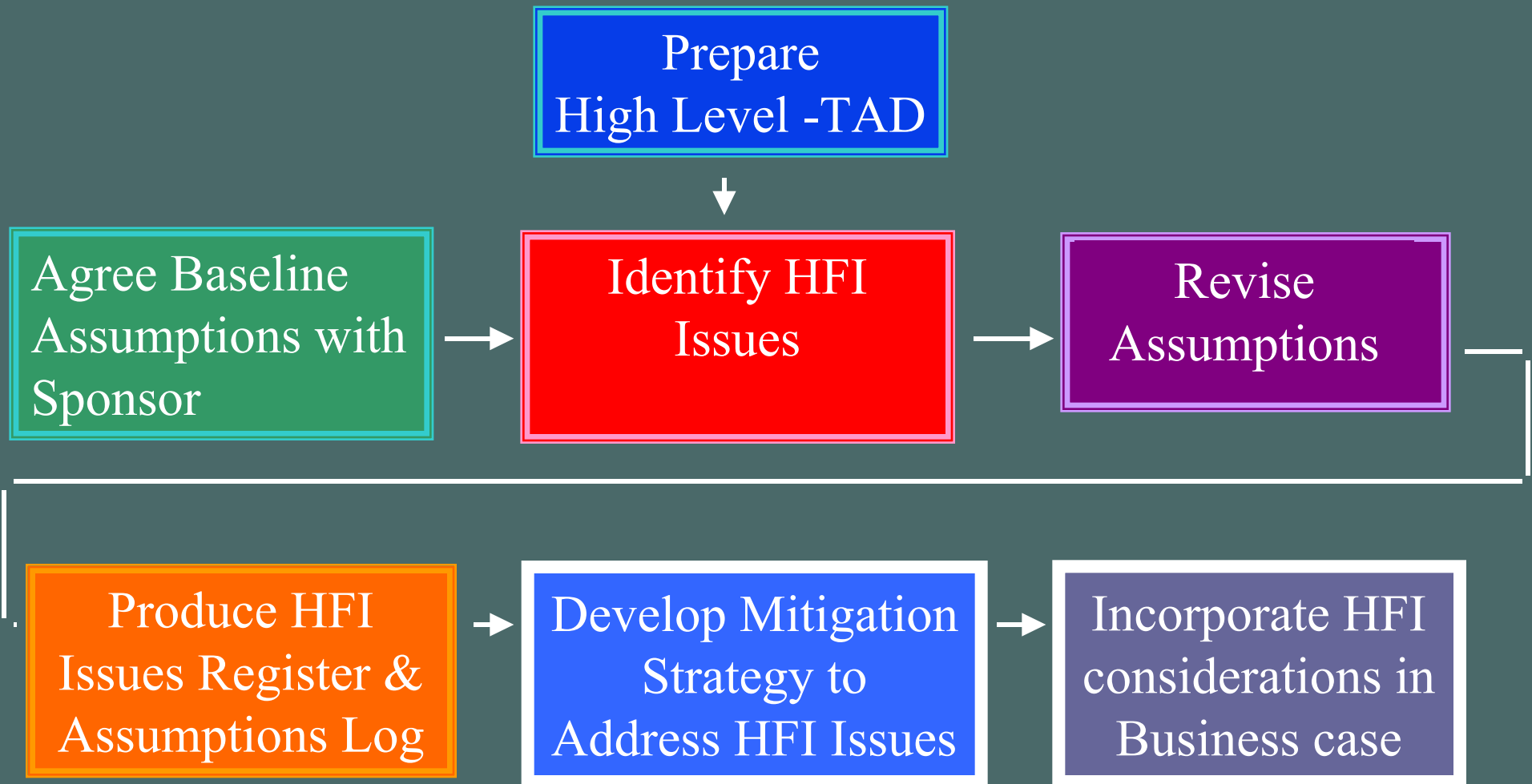
   – Many uncertainties

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Early Human Factors Analysis

- Based on risk analysis

- Integrated with standard project management practice

- Simple and intuitive

- 'Finding out about the problem'

- Aimed at early project stages and limited information

- Identifies and manages key issues

- Evolving and iterative process

- Supporting software tool - HFI KIT

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Major HFI Activities in Concept

Prepare
High Level -TAD

Agree Baseline Assumptions with Sponsor → Identify HFI Issues → Revise Assumptions

Produce HFI Issues Register & Assumptions Log → Develop Mitigation Strategy to Address HFI Issues → Incorporate HFI considerations in Business case

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Major HFI Activities in Concept

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                    ┌─────────────────┐
                    │     Prepare     │
                    │ High Level -TAD │
                    └────────┬────────┘
                             │
                             ▼
┌──────────────────┐  ┌─────────────┐  ┌──────────────┐
│ Agree Baseline   │  │             │  │              │
│ Assumptions with │─▶│ Identify HFI│─▶│    Revise    │
│ Sponsor          │  │   Issues    │  │ Assumptions  │
└──────────────────┘  └─────────────┘  └──────────────┘
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Produce HFI Issues Register & Assumptions Log	Develop Mitigation Strategy to Address HFI Issues	Incorporate HFI considerations in Business case

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HFI Strategy Options

- Conduct additional research/studies/data collection, etc.

- Modify performance requirements.

- Request specific demonstrations or Acceptance activities from bidders.

- Mandate HFI activities by Tenderers (e.g. prototyping, user trials.).

- Warranty/Fitness for purpose.

- Highlight areas of concern in ITT - statement of work.

- Produce HFI data requirements list.

- Initiate change in Doctrine.

- Initiate change in the expected user group/Target Audience.

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Mapping HFI To Project Documents

Strategy Option	Business Case Section
Conduct additional research/studies/data collection, etc.	Costed Plan/Supporting research
Request specific demonstrations or Acceptance activities from bidders	Costed plan/evaluation trials Costed plan/data generation analysis
Mandate HFI activities by tenderers (e.g. prototyping, user trials, etc.)	Costed Plan/data generation analysis
Initiate change in the expected user group/Target Audience	URD*/General description/Users URD/General description/Constraints * URD= User Requirements Document

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HFI KIT

▌ Series of linked databases

▌ Links assumptions and issues

▌ Maintains an approvals process

– each assumption must be approved

▌ Supports assessment of the likelihood and impact of each HFI risk

▌ Provides inputs to the overall project Risk Register

▌ Full record of analysis conducted on any HFI issue during the lifecycle
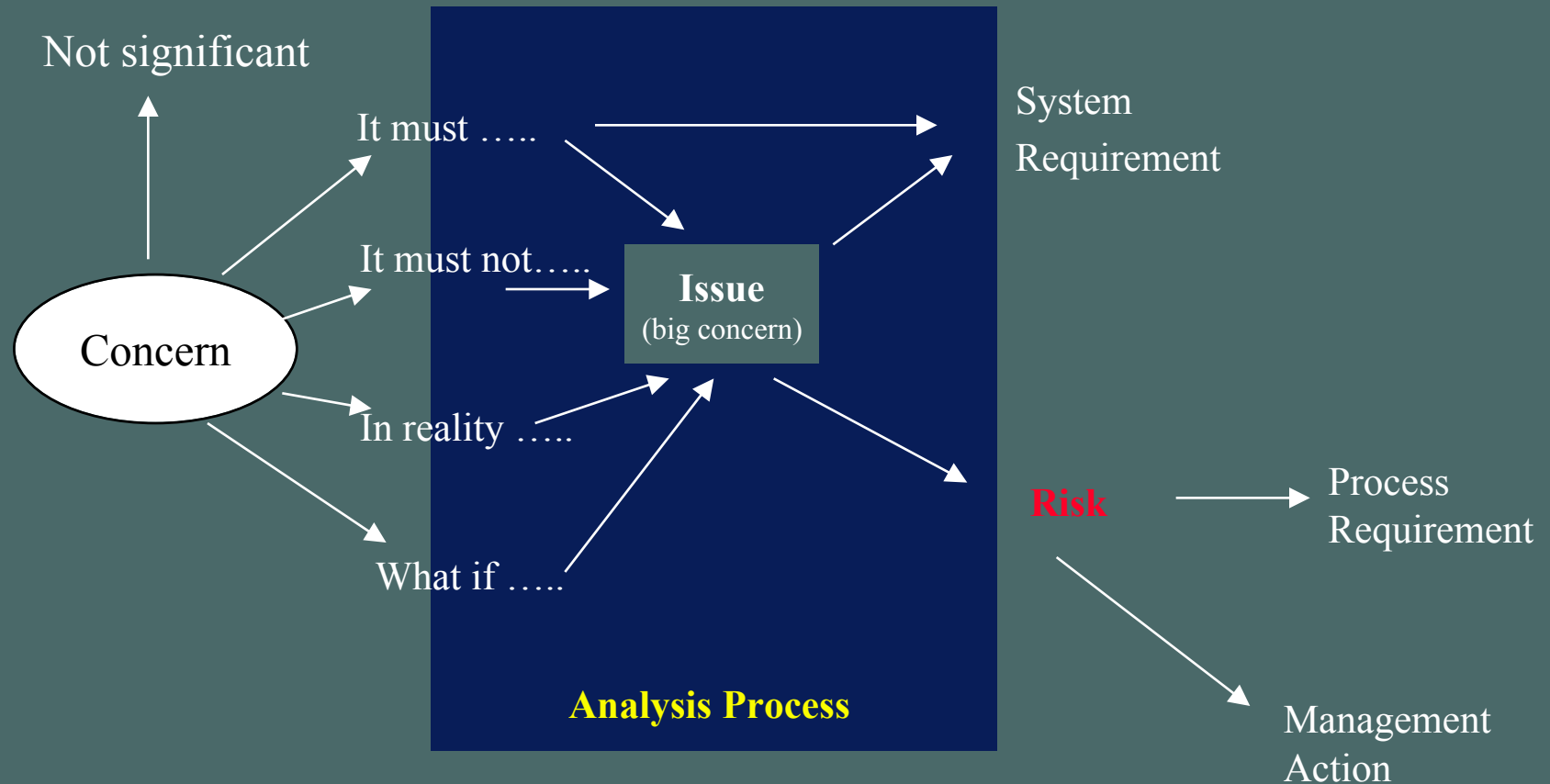
– audit trail

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Applications

- Future Surface Combatant
- TRACER
- Future Attack Submarine

- Airborne Stand Off Radar
- Future Infantry System Technology

FLOW OF INITIAL CONCERNS

Key Lessons

- Experience demonstrates that applying HFI early in a project is critical

- EHFA is the core activity in concept

- Need for restructuring of current guidance

- Need for a clearer split between management activities and technical support activities

- Current role based guidance may no longer be appropriate under SPI

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Future Armoured Reconnaissance Vehicle ?

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